

217/782-2113

"REVISED"

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT - NSPS SOURCE

PERMITTEE

Memorial Medical Center
Attn: Mitchell Johnson
701 North First Street
Springfield, Illinois 62707

<u>Application No.:</u> 05020047	<u>I.D. No.:</u> 167120AKY
<u>Applicant's Designation:</u> HOSPITAL	<u>Date Received:</u> November 22, 2005
<u>Subject:</u> Hospital	
<u>Date Issued:</u> January 17, 2006	<u>Expiration Date:</u> July 28, 2010
<u>Location:</u> 701 North First Street, Springfield	

This permit is hereby granted to the above-designated Permittee to OPERATE emission unit(s) and/or air pollution control equipment consisting of:

Boiler #3 - 31.05 mmBtu/Hour Natural Gas Boiler
Boiler #4 - 31.05 mmBtu/Hour Natural Gas Boiler with Distillate Fuel Oil Used as Backup
Boiler #5 - 29.53 mmBtu/Hour Natural Gas Boiler with Distillate Fuel Oil Used as Backup
3 - 750 kW Diesel Emergency/Standby Electric Generators
2 - 400 kW Diesel Emergency/Standby Electric Generator
1 - 350 kW Diesel Emergency/Standby Electric Generator
1 - 320 kW Diesel Emergency/Standby Electric Generator
2 Ethylene Oxide Sterilizers
Medical Waste Autoclave and Sterilized Waste Grinder/Shredder

pursuant to the above-referenced application. This permit is subject to standard conditions attached hereto and the following special condition(s):

- 1a. This federally enforceable state operating permit is issued to limit the emissions of air pollutants from the source to less than major source thresholds (i.e., 100 tons/year for NO_x, CO and SO₂). As a result the source is excluded from the requirements to obtain a Clean Air Act Permit Program (CAAPP) permit. The maximum emissions of this source, as limited by the conditions of this permit, are described in Attachment A.
- b. Prior to initial issuance, a draft of this permit has undergone a public notice and comment period.
- c. This permit supersedes all operating permits issued for this location.
- 2a. This permit is issued based on the Hospital/Medical/Infectious Waste Incinerator (HMIWI) being permanently shutdown.

- b. Within 30 days after the issuance of this permit, the Permittee shall take the following affirmative steps to demonstrate that the HMIWI has been rendered permanently inoperable:
 - i. Weld the primary chamber door shut;
 - ii. Dismantle the HMIWI; or
 - iii. Other means that reasonably demonstrate that the HMIWI is no longer functional.
- 3a. Boiler #5 constructed, modified or reconstructed after June 9, 1989, and that have maximum design heat input capacity of 29 MW (100 million Btu per hour) or less, but greater than or equal to 2.9 MW (10 million Btu per hour), are subject to a New Source Performance Standard (NSPS) for Small Industrial - Commercial - Institutional Steam Generating Units, 40 CFR 60, Subparts A and Dc. The Illinois EPA is administering NSPS in Illinois on behalf of the United States EPA under a delegation agreement.
- b. At all times, the Permittee shall maintain and operate the boiler, including associated air pollution control equipment, in a manner consistent with good air pollution control practice for minimizing emissions, as required by the NSPS, 40 CFR 60.11(d).
- c. Pursuant to 40 CFR 60.43c (c) and (d), no owner or operator of an affected facility (NSPS) that combusts oil and has a heat input capacity of 8.7 MW (30 million Btu/hr) or greater shall cause to be discharged into the atmosphere from that affected facility any gases that exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity. The PM and opacity standards under this section apply at all times, except during periods of startup, shutdown, or malfunction.
- d. Pursuant to 40 CFR 60.42c (d), no owner or operator of an affected facility (NSPS) that combusts oil shall cause to be discharged into the atmosphere from that affected facility any gases that contain SO₂ in excess of 215 ng/J (0.50 lb/million Btu) heat input; or, as an alternative, no owner or operator of an affected facility that combusts oil shall combust oil in the affected facility that contains greater than 0.5 weight percent sulfur. The percent reduction requirements are not applicable to affected facilities under this paragraph, pursuant to NSPS 40 CFR 60.42(c)(d). However, there is a more stringent state rule in Condition 5 and 6(a).
- 4a. No person shall cause or allow visible emissions of smoke or other particulate matter with an opacity greater than 30 percent, into the atmosphere from any emission unit other than fuel combustion emission units. The emission of smoke or other particulate matter from any such emission unit may have an opacity greater than 30 percent, but not greater than 60 percent for a period or periods aggregating 8 minutes in any 60 minute period provided such opaque emissions permitted during any

60 minute period shall occur from only one such emission unit located within 1,000 foot radius from center point of any other such emission unit owned or operated by such person, and provided further that such opaque emissions permitted from each such emission unit shall be limited to 3 times in 24 hour period pursuant to 35 Ill. Adm. Code 212.123.

- b. No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period to exceed 0.15 kg of particulate matter per MW-hr of actual heat input from any fuel combustion emission unit using liquid fuel exclusively (0.10 lbs/mmBtu) pursuant to 35 Ill. Adm. Code 212.206.
- c. No person shall cause or allow any visible emissions of fugitive particulate matter from any process, including any material handling or storage activity beyond the property line of the emission source, pursuant to 35 Ill. Adm. Code 212.301.
- 5. No person shall cause or allow the emission of sulfur dioxide into the atmosphere in any one hour period from any new fuel combustion source with actual heat input smaller than or equal to 73.2 MW (250 mmBtu/hour), burning liquid fuel exclusively to exceed 0.45 kg of sulfur dioxide per MW-hour of actual heat input when distillate fuel oil is burned (0.3 lbs/mmBtu) pursuant to 35 Ill. Adm. Code 214.122(b) (2).
- 6. This permit is based on the potential to emit of VOM and the maximum theoretical emissions of VOM as limited in this permit, being less than the applicability thresholds of 35 IAC 215, Subpart C, "Organic Emissions from Miscellaneous Equipment".
- 7a. The Permittee shall not utilize distillate fuel oil (Grades No. 1 and 2) in the boilers and generators with a sulfur content greater than the larger of the following two values pursuant to 35 Ill. Adm. Code 214:
 - i. 0.28 weight percent, or
 - ii. The weight percent given by the formula: Maximum weight percent sulfur = $(0.000015) \times (\text{Gross heating value of oil, Btu/lb})$.
- b. Organic liquid by-products or waste materials shall not be used in these fuel combustion emission sources.
- c. The Illinois EPA shall be allowed to sample all fuels stored at the above location.
- 8. No person shall cause or allow the emission of carbon monoxide (CO) into the atmosphere from any fuel combustion emission source with actual heat input greater than 2.9 MW (10 mmBtu/hr) to exceed 200 ppm, corrected to 50 percent excess air, pursuant to 35 Ill. Adm. Code 216.121.

- 9a. Emissions and operation of the two 31.05 mmBtu/hour and one 29.53 mmBtu/hour natural gas boilers combined shall not exceed the following limits:

Natural Gas Usage: 78.7 mmscf/month, 787 mmscf/year.

<u>Pollutant</u>	Emission Factor		Emissions	
	(Lb/mmscf)	(Tons/Mo)	(Tons/Yr)	
Nitrogen Oxide (NO _x)	100.0	3.93	39.35	
Carbon Monoxide (CO)	84.0	3.31	33.05	
Sulfur Dioxide (SO ₂)	0.6	0.02	0.24	
Particulate Matter (PM)	7.6	0.30	2.99	
Volatile Organic Material (VOM)	5.5	0.22	2.16	

These limits are based on the maximum boilers operations, standard emission factors AP-42, and maximum hours of operation. Compliance with annual limits shall be determined on a monthly basis from a running total of 12 months of data.

- b. Emissions and operation of Boilers #4 and #5 combined using distillate fuel oil as backup shall not exceed the following limits:

Fuel Oil #2 Usage: 66,000 gallons/month, 66,000 gallons/year.

<u>Pollutant</u>	Emission Factor		Emissions	
	(Lb/1,000 Gal)	(Tons/Mo)	(Tons/Yr)	
Nitrogen Oxide (NO _x)	20.0	0.66	0.66	
Carbon Monoxide (CO)	5.0	0.16	0.16	
Sulfur Dioxide (SO ₂)	42.6	1.31	1.31	
Particulate Matter (PM)	2.0	0.07	0.07	
Volatile Organic Material (VOM)	0.2	0.01	0.01	

The emissions from the boilers are based on maximum boiler operations and standard emission factors AP-42. Compliance with annual limit shall be determined on a monthly basis from a running total of 12 months of data.

- 10a. Diesel fuel shall be the only fuel fired in the diesel generators. The use of any other fuel shall require a revised permit.
- b. Emissions and operation of the three 750 kW, two 400 kW, 350 kW and 230 kW emergency generators (combined) shall not exceed the following limits:

<u>Pollutant (Total All Units)</u>	<u>(Lbs/kW-Hr)</u>	<u>(Tons/Month)</u>	<u>(Tons/Year)</u>
Nitrogen Oxide (NO _x)	0.0358	32.45	32.45
Carbon Monoxide (CO)	0.0080	7.24	7.24
Sulfur Dioxide (SO ₂)	0.0016	1.43	1.43
Particulate Matter (PM)	0.0017	1.55	1.55
Volatile Organic Material	0.0018	1.67	1.67

These emissions are based on 500 hours of operation of each of the generators and standard emission factors of AP-42. Compliance with annual limits shall be determined from a running total of 12 months of data.

11. Operation and emissions of the two sterilizers combined shall not exceed the following limits:

<u>Pollutant</u>	<u>Emissions</u>	
	<u>(Tons/Month)</u>	<u>(Tons/Year)</u>
Volatile Organic Material (VOM)	0.7	7.0

The emissions from the sterilizers are based on 1.60 lbs/hour and maximum hours of operation (8,760 hours/year). Compliance with annual limits shall not be determined from a running total of 12 months of data.

- 12a. This permit is issued based on negligible emissions of volatile organic material and particulate matter from the autoclave and grinder/shredder. For this purpose emissions from this emission source shall not exceed normal emission rates of 0.1 lbs/hour and 0.44 tons/year.
- b. In the event that the operation of this emission unit results in an odor nuisance, the Permittee shall take appropriate and necessary actions to minimize odors, including but not limited to, changes in raw material or installation of controls, in order to eliminate the odor nuisance.
- c. The volatile organic material and/or particulate matter concentration in the effluent stream of the medical waste autoclave and sterilized waste grinder/shredder shall be measured by an approved independent testing service, within 45 days of a written request by the Illinois EPA for such a test. The Illinois EPA will require this test if, based on observations by Field personnel, the medical waste autoclave and sterilized waste grinder/shredder is poorly maintained or operated so as to make compliance with Conditions 1, 2, 3 and 4 uncertain.
13. The emissions of Hazardous Air Pollutants (HAP) as listed in Section 112(b) of the Clean Air Act shall be less than 10 tons/year of any single HAP and 25 tons/year of any combination of such HAPs. As a result of this condition, this permit is issued based on the emissions of all HAPs from this source not triggering the requirements to obtain a Clean Air Act Permit Program Permit (CAAPP), and Section 112(G) of the Clean Air Act.
- 14a. The Permittee shall maintain monthly and annual records of the following items:

- i. Natural gas usage (mmscf/month and mmscf/year);
 - ii. Fuel oil usage (gallons/month and gallons/year);
 - iii. Sulfur content of fuel oil (weight %);
 - iv. Operating hours for each boiler, each generator, and sterilizer (hours/month and hours/year);
 - v. Ethylene oxide usage for the sterilizers (lb/month);
 - vi. Emissions of CO, NO_x, PM, SO₂, and VOM from the source with supporting calculations (tons/month and tons/year);
 - vii. Amount of medical waste material processed in autoclave and grinder/shredder (lbs/month and tons/year); and
 - viii. Hours of operations for each permitted equipment (hours/month and hours/year).
- b. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least three years from the date of entry and shall be made available for inspection and copying by the Illinois EPA upon request. Any records retained in an electronic format (e.g., computer) shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to an Illinois EPA request for records during the course of a source inspection.
15. If there is an exceedance of the requirements of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Illinois EPA's Compliance Section in Springfield, Illinois within 30 days after the exceedance. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or violation and efforts to reduce emissions and future occurrences.
16. Two (2) copies of required reports and notifications concerning equipment operation or repairs, performance testing or a continuous monitoring system shall be sent to:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Compliance Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276

and one (1) copy shall be sent to the Illinois EPA's regional office at the following address unless otherwise indicated:

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Illinois Environmental Protection Agency
Division of Air Pollution Control
5415 North University
Peoria, Illinois 61614

It should be noted that this permit has been revised to incorporate Construction Permit 05110063, to add medical waste autoclave and sterilized waste grinder/shredder.

If you have any questions concerning this permit, please call George Kennedy at 217/782-2113.

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

DES:GMK:lsm

cc: Region 2

Attachment A - Emission Summary

This attachment provides a summary of the maximum emissions from this facility operating in compliance with the requirements of this federally enforceable permit. In preparing this summary, the Illinois EPA used the annual operating scenario which results in maximum emissions from such a plant. The resulting maximum emissions are below the levels, e.g., 100 tons/year of NO_x, CO, SO₂ and VOM at which this source would be considered a major source for purposes of the Clean Air Act Permit Program. Actual emissions from this source will be less than predicted in this summary to the extent that less material is handled and control measures are more effective than required in this permit.

		E M I S S I O N S (Tons/Year)						HAPs	
<u>Emissions Unit</u>	<u>Fuel</u>	<u>NO_x</u>	<u>CO</u>	<u>SO₂</u>	<u>PM</u>	<u>VOM</u>	<u>Single</u>	<u>Combined</u>	
3 Boilers	Natural Gas	39.35	33.05	0.24	2.99	2.16			
2 Boilers (Back Up Fuel)	#2 Oil	0.66	0.17	1.31	0.07	0.01			
7 Generators	#2 Oil	32.45	7.24	1.43	1.55	1.67			
2 Ethylene Oxide Sterilizers						7.01			
Medical Waste Autoclave and Sterilized Waste Grinder/Shredder		_____	_____	_____	<u>.044</u>	<u>0.44</u>	_____	_____	
Total		72.46	40.46	2.98	5.05	11.29	< 0.44	< 0.44	

GMK:psj